

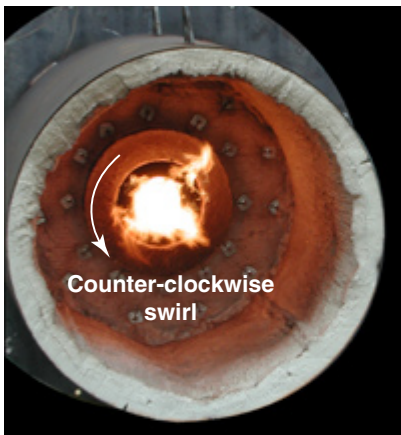
HEATEC TEC-NOTE

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HOW TO RECOGNIZE AN OUT-OF-TUNE BURNER

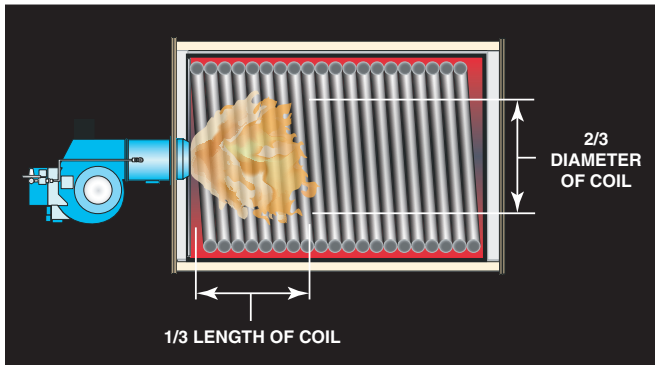
Do you know how to tell if the burner on your hot oil heater is out of tune? An improperly tuned burner reduces fuel efficiency and produces unwanted emissions.

Under normal operating conditions with a properly tuned burner, the heater should not smoke. The



flame pattern, when viewed through the sight glass on the heater end plate should have a counter-clockwise swirl. The flame should be no longer than 1/3 the length of the coil. Flame diameter should be

approximately 2/3 the diameter of the coil. Flame color on natural gas fuel should be bright blue.



When fired from fuel oil, flame color should be bright yellow. The flame should be centered in the coil.

Look for the following conditions to see if the burner requires tuning:

Smoke. If smoke comes from the exhaust stack, it is a strong indication that the fuel-to-air ratio is out of adjustment. Black smoke indicates too much fuel in the mixture. White smoke indicates too much air.

Flame color. If the flame color becomes very light, there could be too much air in the mixture. If the flame color becomes dark and dull, there could be too much fuel. If the natural gas flame has noticeable yellow tips, there could be too much fuel.

Flame impingement. If the flame impinges on the coil, the diffuser could be bent or the nozzle could be clogged. Too much fuel in the fuel-to-air ratio can also cause impingement on the coil. Impingement reduces the life of the coil.

Unstable flame. If the flame pulsates or extends to lengths longer than 1/3 the length of the coil, the diffuser could be out of adjustment or the nozzle could be clogged.

If the flame has “tracers” or long extensions of flame that extend beyond 1/3 the length of the coil, the diffuser could be out of adjustment or the nozzle could be clogged.

Properly tuning the burner improves fuel efficiency and keeps unwanted emissions to a minimum.

Only a thoroughly qualified burner technician should tune the burner. See the burner manual supplied with your heater for additional information.

Heatec offers burner tuning as a service to our customers. For more information, call our service department at 1-800-235-5200.